

Message Text

PAGE 01 STATE 200535

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C O N F I D E N T I A L STATE 200535

FOLLOWING REPEAT BRASILIA 6997 ACTION SECSTATE INFO
BOGOTA BONN BUENOS AIRES CARACAS LIMA MEXICO
SANTIAGO 10 AUGUST 76.

QUOTE

C O N F I D E N T I A L BRASILIA 6997

E. O. 11652: GDS
TAGS: PARM; BR
SUBJECT: LATIN AMERICAN TRENDS AND PROSPECTS IN NUCLEAR DEVELOP-
MENT

REF: STATE 151277

1. SUMMARY. GOB IS GENERALLY PERCEIVED TO BE COMMITTED TO
NATIONAL DEVELOPMENT OF FULL NUCLEAR CAPABILITY, INCLUDING
OPTION FOR NUCLEAR EXPLOSIVE DEVELOPMENT, BUT IS DEVELOPING
CAPABILITY PRINCIPALLY THROUGH IMPORTATION OF EQUIPMENT,
MATERIAL, AND TECHNOLOGY UNDER SAFEGUARDS (INCLUDING SAFEGUARDS
ON REPLICATION OF TECHNOLOGY). TO DATE GOB WILL NOT AGREE
TO PUT INDIGENOUS NUCLEAR DEVELOPMENT UNDER SAFEGUARDS OR SIGN
NPT. WHILE GOB NUCLEAR POWER COMMITMENT TO PWR SYSTEM PRESERVES
THIS POSITION, IT IS AIMED PRIMARILY AT IMPORTANT ENERGY
OBJECTIVES AND REQUIREMENTS RATHER THAN OPTIMIZED FROM COST
AND TECHNICAL STANDPOINTS FOR NUCLEAR EXPLOSIVE OPTION.
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PAGE 02 STATE 200535

POSSIBILITY OF ALTERING GOB
COURSE OF ACTION WOULD REQUIRE SIGNIFICANT--AND NOT VERY
LIKELY--POSITIVE ACTIONS BY THE U.S.
(E.G., SHARING OF US TECHNOLOGY) AND WOULD BE LIMITED

TO POSTPONING GOB TRANSITIONS FROM AS SMALL RESEARCH/TRAINING FUEL-CYCLE FACILITIES TO COMMERCIAL-SCALE PLANTS. END SUMMARY.

2. EMBASSY CAN ADD RELATIVELY LITTLE TO INFORMATION AND JUDGEMENTS ALREADY REPORTED OR AVAILABLE TO DEPARTMENT ON GOB NUCLEAR PROGRAM AND PLANS. NEW INFORMATION WILL BE ADDED AS DETAILS OF CONTRACTS BETWEEN GOB AND GERMAN ENTITIES ARE RELEASED PUBLICLY OR BECOME KNOWN TO BRASILIA OR BONN MISSIONS. SCHEDULE FOR IMPLEMENTATION OF PROGRAMS COULD BE AFFECTED BY ECONOMIC SITUATION, ESPECIALLY BALANCE OF PAYMENTS PROBLEM, AND CHANGES IN ENERGY REQUIREMENTS. COMMENTS ON PARTICULARS OF PARAGRAPH 4 FOR BRASILIA FOLLOW:

(A) EMBASSY CAN NEITHER CONFIRM OR DENY GERMAN CLAIM THAT PILOT REPROCESSING PLANT IS NOW PLANNED TO TAKE FORM OF JOINT VENTURE, WITH CONTINUED GERMAN PRESENCE. ORIGINALLY FACILITY WAS ANNOUNCED AS NUCLEBRAS OWNED AND MANAGED, WITH DESIGN, EQUIPMENT, AND TECHNICAL ASSISTANCE COMING FROM GERMANY ON CONTRACT BASIS ONLY. OSTENSIBLE PURPOSE OF PLANT IS TRAINING, R&D ON REPROCESSING, AND PRODUCTION OF LIMITED AMOUNT OF PLUTONIUM FOR R&D ON ITS UTILIZATION IN DIFFERENT REACTOR TYPES AND FUEL ELEMENTS. WHEN US REPRESENTATIVES FLOATED DURING MAY DISCUSSIONS OF NUCLEAR BILATERAL IN WASHINGTON THE IDEA OF LIMITING THE OUTPUT OF THE PILOT PLANT TO A LEVEL WHICH WOULD REDUCE INTERNATIONAL CONCERNS, THE GOB REPRESENTATIVES APPEARED WILLING TO CONSIDER THIS AS PART OF A PACKAGE OF INCREASED NUCLEAR COOPERATION. CNEN, FOR ITS PART, STATES THAT THERE IS NO DEFINITE INTENT TO EMPLOY/PU-RECYCLE IN THE PWR-TYPE POWER PLANTS TO BE BUILT. ALTHOUGH NOT EXPLICITLY STATED, A REAL POSSIBILITY IS THAT THE GOB INTENDS TO ACQUIRE REPROCESSING TECHNOLOGY TO HELP KEEP THEIR OPTIONS OPEN ON UTILIZATION OF THORIUM IN SOME TYPE OF REACTOR IN THE FUTURE, ON THE FAST-BREEDER SYSTEMS, AND PERHAPS ON PLUTONIUM-BASED EXPLOSIVES.

(B) ALL INFORMATION AVAILABLE TO THE EMBASSY SUPPORT THE CONFIDENTIAL

PAGE 03 STATE 200535

PUBLIC GOB STATEMENT THAT THE ENRICHMENT FACILITY (DESCRIBED AS AN EXPANDABLE SEMI-INDUSTRIAL DEMONSTRATION PLANT) WILL BE A JOINT VENTURE -- ORIGINALLY DIVIDED 75 PERCENT NUCLEBRAS, 15 PERCENT STEAG, AND 10 PERCENT INTERATOM. EARLY CONTRACTS SHOULD COVER THE DEVELOPMENT OF THE PROCESS FOR JET-NOZZLE ENRICHMENT DEVELOPMENT PROCESS IN GERMANY AND THIS PLANT IN BRAZIL.

(C) DESPITE SILVEIRA OFFHAND REJECTION OF US IDEA OF MULTINATIONAL FUEL-CYCLE CENTER, IT IS CONCEIVABLE THAT GOB MIGHT SEE ADVANTAGE IN BECOMING SITE FOR COMMERCIAL-SCALE REGIONAL MULTINATIONAL FUEL CYCLE CENTER, IF THIS INVOLVED REAL TRANSFERS OF TECHNOLOGY AND KNOW-HOW TO BRAZIL. GOB WILL BE INTERESTED IN

LICENSING OR FORMING JOINT VENTURES OUTSIDE BRAZIL ON JET-NOZZLE ENRICHMENT TECHNOLOGY, IF THAT DEVELOPMENT IS SUCCESSFUL, BUT AT PRESENT WOULD STILL WANT VERY MUCH, 8* 85 2343 09 8?)3, TO ACQUIRE DIFFUSION OR CENTRIFUGE ENRICHMENT TECHNOLOGY AND RE-PROCESSING TECHNOLOGY. IT SHOULD BE REMEMBERED THAT NEITHER AT THE TIME THE GO OPTED FOR NATIONAL FUEL-CYCLE CAPABILITY NOR SINCE HAS THERE BEEN A CONCRETE POSSIBILITY FOR THE FUTURE ESTABLISHMENT OF A MULTINATIONAL FUEL CYCLE CENTER IN BRAZIL OR ANYWHERE ELSE IN LATIN AMERICA, OR FOR THE FUTURE TRANSFER OF ENRICHMENT TECHNOLOGY TO BRAZIL UNDER ANY CONDITIONS WHICH THE GOB COULD HAVE EVALUATED AS AN ALTERNATIVE TO ITS 1975 DECISION. FURTHERMORE THE ONLY ENTITIES WITH WHICH THE GOB COULD HAVE BARGAINED TO OBTAIN A FUEL CENTER OR THE FUEL-CYCLE TECHNOLOGY WOULD HAVE BEEN ENTITIES TO WHICH THE OFFER OF A SOLE-SOURCE REACTOR PURCHASE AGREEMENT WOULD HAVE BEEN AN INDUCEMENT. IN THIS LIGHT, IT IS NOT NECESSARY TO INTERPRET THE 1975 DECISION AND AGREEMENT WITH GERMANY AS COMPLETELY PRECLUDING FUTURE GOB FLEXIBILITY ON PARTICIPATION IN REGIONAL MULTINATIONAL FUEL CYCLE VENTURES -- ESPECIALLY SINCE IT IS LIKELY THAT PROBLEMS OF TECHNOLOGY, PRICE, FACTORS RELATED TO ECONOMIC SCALE, AND OTHERS WILL ARISE AS THE BRAZIL/GERMANY DEAL DEVELOPS--BUT FLEXIBILITY WILL DECREASE AS THE PROGRAM IS IMPLEMENTED. THIS IS NOT TO SAY THAT THE GOB WOULD FOREGO ALL NATIONAL PLANS IN RETURN FOR SITING A MULTINATIONAL CENTER HERE. WE BELIEVE THAT THE GOB WOULD STILL INSIST ON A PILOT PLANT TO DO R&D ON REPROCESSING (ESPECIALLY FOR NEW FUEL TYPES), ON A PILOT PLANT FOR JET-NOZZLE ENRICHMENT, AND ON RETAINING THE OPTION TO BUILD NATIONAL FACILITIES

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PAGE 04 STATE 200535

IN THE FUTURE ALTHOUGH NOT CARRYING OUT PRESENT PLANS FOR SUCH FACILITIES.

(D) EMBASSY VIEW IS THAT GOB WOULD REQUIRE EFFECTIVE ACQUISITION BY NUCLEBRAS OF THE ENRICHING TECHNOLOGY EMPLOYED AS PART OF ITS PRICE FOR PARTICIPATION IN ANY REGIONAL FUEL CYCLE CENTER OUTSIDE OF BRAZIL IN LIEU OF A NATIONAL ENRICHMENT PLANT, AS WELL AS EXTENSIVE PARTICIPATION BY BRAZILIAN INDUSTRY IN CONSTRUCTION AND OPERATION OF THE CENTER. WE ARE SOMEWHAT MORE OPTIMISTIC THAT, ONCE OPERATION OF THE REPROCESSING PILOT PLANT IN BRAZIL IS SUCCESSFUL, THE GOB MIGHT BE DISSUADED FROM MOVING TO A COMMERCIAL SCALE OPERATION BY PARTICIPATION IN A REGIONAL REPROCESSING CENTER -- IF SUCH A CENTER WERE NOT LOCATED IN ARGENTINA AND IF THERE WERE OTHER INDUCEMENTS TO BRAZIL. IN THE CASE OF REPROCESSING, THERE IS PROBABLY AMPLE TIME FOR THE REGIONAL CENTER CONCEPT TO DEVELOP BEFORE THE GOB MAKES DECISIONS AND ACTIONS DIFFICULT TO REVERSE THAT IS, A DECISION TO MOVE TO A FULL-SCALE PLANT. ON ENRICHMENT, HOWEVER, TIME REMAINING TO ALTER THE COURSE OF GOB PLANS AND IMPLEMENTATION OF THESE PLANS IS VERY SHORT IF NOT ALREADY PAST, UNLESS THE JET-NOZZLE PROCESS FAILS IN SOME WAY. LACK OF SUCCESS IN REDUCING THE POWER CONSUMPTION AND COSTS OF THE PROCESS WOULD NOT CON-

STITUTE A FATAL FAILURE FOR BRAZIL, ALTHOUGH CURRENT ECONOMIC STRINGENCIES HAVE PRODUCED LOW-LEVEL MURMURINGS AGAINST HIGH INVESTMENTS AND DEBTS INVOLVED IN GERMAN AGREEMENT. IN SUM, WE WOULD CERTAINLY EXPECT THE GOB TO INSIST ON HAVING NATIONAL PILOT FACILITIES FOR ENRICHING AND REPROCESSING IF IT WERE PARTICIPATING IN A MULTINATIONAL FUEL CYCLE CENTER LOCATED OUTSIDE OF BRAZIL IN SOUTH AMERICA.

3. WITH RESPECT TO NUCLEAR PROGRAM IN GENERAL, ON SURFACE GOB APPEARS TO HAVE MADE TOTAL COMMITMENT TO PWR LINE OF TECHNOLOGY -- TRANSFER OF ALL RELEVANT TECHNOLOGY, ESTABLISHMENT OF REACTOR COMPONENT INDUSTRY, ASSOCIATED FULL FUEL-CYCLE, ETC. -- WITH AIM OF BECOMING SELF-SUFFICIENT AND POTENTIAL EXPORTER OF THIS TYPE OF POWER PLANT AND FUEL BY LATE 1980'S. EXCEPT FOR KEEPING HAND IN FUTURE LMFBR (LIQUID METAL FAST BREEDER REACTOR) DEVELOPMENT BY PURCHASE OF COBRA RESEARCH REACTOR FROM FRANCE, NUCLEBRAS HAS BEGUN NO SIGNIFICANT REACTOR DEVELOPMENT IN ITS OWN LABORATORIES OR OTHER BRAZILIAN NUCLEAR CENTERS. DESPITE REPEATED STATEMENTS OF STRONG INTEREST IN CONFIDENTIAL

PAGE 05 STATE 200535

HTGR (HIGH TEMPERATURE GAS-COOLED REACTOR) AND GCFR (GAS-COLLED FAST REACTOR.) RELEVANT PROGRAM AT INSTITUTE OF ATOMIC ENERGY IN SAO PAULO (WHICH HAS BEEN US-ORIENTED) APPEARS TO BE DYING ON VINE. GOB HAS LARGE LATENT INTEREST IN LIGHT WATER BREEDER CONCEPT -- I.E., INTRODUCTION OF THORIUM AS FERTILE MATERIAL AND OPERATION OF PWR WITH U233-BASED CORE. ONLY ANOMALY IN NUCLEBRAS PROGRAM IS CONTINUING INFORMATION RECEIVED BY EMBASSY ON GOB INTEREST IN HEAVY WATER PRODUCTION. HOWEVER EMBASSY IS NOT AWARE OF NUCLEBRAS ATTENTION TO RESEARCH ON HEAVY WATER UTILIZATION. THE PROGRAM OF NATURAL URANIUM/THORIUM/HEAVY WATER CRITICAL ASSEMBLY (CAPITU) AT INSTITUTE FOR RADIOACTIVE RESEARCH IN BELO HORIZONTE SHOWED NO SIGNS OF SPECIAL ACTIVITY WHEN VISITED RECENTLY. THERE IS NO INDICATION THAT NUCLEBRAS IS TAKING SERIOUSLY THE IEA PROPOSAL FOR A NATIONALLY DESIGNED AND CONSTRUCTED NATURAL URANIUM/HEAVY WATER REACTOR OF ABOUT 100 MWT FOR REACTOR RESEARCH AND TRAINING.

4. THUS EMBASSY BELIEVES USG MAY HAVE ONLY QUITE LIMITED OPPORTUNITY FOR CONSTRUCTIVE INFLUENCE ON GOB NUCLEAR PROGRAM. WHAT OPPORTUNITY REMAINS IS DUE TO PAST STRONG LINKS FROM NUCLEAR COOPERATION (ALTHOUGH PRESENT GOB NUCLEAR DECISION-MAKERS ARE NOT MUCH INFLUENCED BY PAST COOPERATION); TO LEVERAGE OF ENRICHED URANIUM SUPPLY FOR ANGRA I AND POSSIBLE FUEL SUPPLY FOR ADDITIONAL POWER PLANTS; AND TO PRESENT AND FUTURE PROBLEMS IN EXCLUSIVE NUCLEAR LINK WITH FRG (ALTHOUGH CURRENT DEVELOPMENTS INDICATE THAT COOPERATION HAS PROGRESSED SUBSTANTIALY DESPITE SOME DIFFICULTIES.) TO EXPLOIT THIS RESIDUAL OPPORTUNITY WOULD REQUIRE USG POLICY DECISIONS AND ACTIONS ON TECHNOLOGICAL COOPERATION, TECHNOLOGY TRANSFER, EQUIPMENT AND MATERIAL TRANSFERS (ALL BASED ON INTERNATIONAL SAFEGUARDS CONCEPTS), AND RECOGNITION OF THE LEGITIMACY OF CERTAIN OF THE GOB TECHNICO-

ECONOMIC OBJECTIVES IN ITS NATIONAL CONTEXT -- NONE OF WHICH
SEEMS VERY LIKELY TO OCCUR IN THE LIGHT OF US NATIONWIDE CURRENT
QUESTIONING OF EFFICACY OF SAFEGUARDS, UNCERTAINTIES ON OUR
FUTURE NUCLEAR DEVELOPMENTS, AND PRIMARY FOCUS ON PROLIFERATION
ASPECTS OF ANY FOREIGN NUCLEAR DEVELOPMENT. WE DO NOT
SEE MULTINATIONAL REGIONAL FUEL-CYCLE CENTER CONCEPT DEVELOPING
RAPIDLY ENOUGH OR ALONG THOSE LINES SUFFICIENTLY ATTRACTIVE TO
BRAZIL TO PROVIDE EFFECTIVE ALTERNATIVES TO BRAZILIAN NATIONAL
NUCLEAR DEVELOPMENT.
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PAGE 06 STATE 200535

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